

Final NPDES General Permit for Discharges from New and Existing Sources in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico

Agency: United States Environmental Protection Agency

Action: Final Modification of a National Pollutant Discharge Elimination System Permit

Summary: Region 6 of the United States Environmental Protection Agency (EPA) today issues a modified National Pollutant Discharge Elimination System (NPDES) general permit for discharges in the Oil and Gas Extraction Point Source Category which are located in the Western Portion of the Outer Continental Shelf (OCS) of the Gulf of Mexico (GMG290000). The permit authorizes discharges from new and existing sources and new discharges in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 CFR Part 435, Subpart A) located in and discharging pollutants to Federal waters in lease blocks located seaward of the territorial seas off Louisiana and Texas. Discharges of produced water to Federal waters from facilities located in the territorial seas are also authorized. This final permit modifies the existing permit issued April 19, 1999 (see 64 FR 19156, April 19, 1999). The discharge of drill cuttings produced using synthetic and other non-aqueous based drilling fluids and the discharge of waste water which has been used to hydrostatically test existing pipelines are authorized by this modification.

Dates: All limits, prohibitions, and monitoring requirements shall become effective thirty days after the publication date of the permit in the Federal Register.

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Supplemental Information: Pursuant to section 402 of the Clean Water Act (CWA), 33 U.S.C. section 1342, EPA proposed and solicited comments on the modification of the NPDES general permit GMG290000 at 66 FR 29948 (June 4, 2001). Notice of this proposed permit was also published in the New Orleans Times Picayune and the Lafayette Daily Advisor on June 9, 2001. The comment period closed on August 6, 2001.

The permit issued today authorizes new discharges of drill cuttings generated using synthetic and other non-aqueous based drilling fluids and hydrostatic test water from pressure testing of existing pipelines. The existing general permit, which covers existing dischargers, new dischargers, and New Sources was published in the Federal Register on April 19, 1999. Water-based drilling fluids, and the cuttings produced using them, are presently authorized to be discharged under the OCS general permit. The limitations and monitoring requirements pertaining to discharges of water based drilling fluids and the associated cuttings are not change with this modification. Likewise, the existing permit's discharge prohibitions for oil-based and mineral oil-based drilling fluids and the cuttings generated using them are

not changed. The permit's existing authorization of the discharge of water used to hydrostatically test new piping and new pipelines and the associated limitations and monitoring requirements also are not proposed to be modified.

EPA received comments from the Offshore Operators Committee (OOC), M-I *LLC*, Baroid Drilling Fluids, Petro-Canada, and B.P. Chemicals. In response to those comments clarifications were made in the permit's language. Protocol were included in the final permit for the new test methods for sediment toxicity and biodegradation. A statistical tool was also included in the final permit to account for variability in those new test methods.

A summary of the comments received on the proposed permit and EPA's responses to those comments follows.

Response to Comments.

Comment Number 1:

The Offshore Operators Committee suggested a change in wording to show that operators should report the results of stock drilling fluid monitoring on the Discharge Monitoring Report (DMR) if they conduct the monitoring rather than the drilling fluid supplier.

Response:

The change was made as requested.

Comment Number 2:

The Offshore Operators Committee requested a revision of the permit's language to state that the drilling fluid does not have to be removed from the cuttings for the 4-day sediment toxicity test. OOC added that testing should be performed on sample of cuttings with adhered drilling fluid which is discharged from the shale shakers.

Response:

EPA disagrees. Effluent limitations Guidelines require that testing is performed on drilling fluid removed from drill cuttings at the solids control equipment. The permit language has been modified to more closely reflect the guidelines.

Comment Number 3:

The Offshore Operators Committee requested changes in the permit's language for the limit of base fluid retained on drill cuttings to more closely reflect the Guidelines. Those changes included

limiting the maximum samples required to three per day and clarification that the limit applies to the mass of the base non-aqueous fluid.

Response:

EPA agrees that the changes will make the permit more closely reflect Effluent Limitations Guidelines. They have been included in the final permit.

Comment Number 4:

The Offshore Operators Committee requested that the final permit include a definition of high density chemosynthetic communities and include Minerals Management Services revised prohibition of discharging within 1,500 feet of the communities.

Response:

EPA agrees. The changes were made as requested.

Comment Number 5:

The Offshore Operators Committee requested a change in the permit's language to show that de minimis discharges of non-aqueous based drilling fluids, such as those which are wind blown from the pipe rack, are clearly authorized.

Response:

EPA agrees with the request. The changes were made as requested.

Comment Number 6:

The Offshore Operators Committee requested some changes in the Best Management Practices (BMP) requirements to show: that the BMPs are conducted by the operator in conjunction with the drilling contractor; the BMP plan should be in place prior the discharge of non-aqueous based drilling fluids; certification that the BMP plan is complete is kept on site and not submitted to EPA, except on request; retort monitoring data and dates associated with BMPs are not required to be reported to EPA but maintained with the operator's NPDES permit records; and to specify that the BMP plan is required to be modified within 14 days whenever there is a change which increases generation of Non-aqueous waste or within 3 months if the BMP requirements in the permit are modified.

Response:

EPA agrees. The changes were made as requested.

Comment Number 7:

The Offshore Operators Committee requested inclusion of sediment toxicity testing protocol in the final permit. The Committee stated that there are some differences between test required the guidelines and the ASTM method cited by the proposed permit. Specifically, the ASTM method was not designed to be a compliance test but was designed primarily to evaluate chemicals for sediment toxicity. The ASTM method requires certain test acceptance criteria such as randomization of test containers and testing of specific test material concentrations. Unlike the ASTM method, the permit requires testing of the discharged drilling fluid concurrently with a standard fluid. The permit also requires a four day test for drilling fluids discharged with cuttings whereas the test method is designed for a ten day test.

Response:

Testing protocol was included in the final permit as requested.

Comment Number 8:

The Offshore Operators Committee requested that EPA delay compliance requirements for the four-day sediment toxicity limit until February 1, 2003. OOC commented that adoption of the sediment toxicity test and protocol were done very quickly with limited time for method refinement and validation. Since the Outer Continental Shelf general permit will be the first instance where sediment toxicity testing is used for compliance purposes, time is needed to develop commercial laboratory capabilities and conduct inter-laboratory calibration.

Response:

EPA agrees that more time may be needed to develop laboratory capabilities and improve the experience level of labs running the test. That additional time is given in an enforcement administrative order. Sediment toxicity limits were promulgated as Best Available Technology Economically Achievable by the Effluent Limitations Guidelines. Thus, the limits are required to be included in the permit (see section 301(b)(2)(C) of the Clean Water Act).

Comment Number 9:

The Offshore Operators Committee and M-I stated that variability in the sediment toxicity tests may cause results which suggest that a drilling fluid is more toxic than the internal olefin standard when in fact it is not. The commentators suggested use of a statistical method to account for testing variability. The Offshore Operators Committee and M-I also requested that the permit allow use of a method to account for testing variability in the biodegradation test. Protocol for the biodegradation test was

offered which reflects the use of the variability factor.

Response:

A method to account for test variability has been included in the final permit as requested. Toxicity tests generally are not subject to a higher degree of variability than other test methods. However, the pass/fail type of tests selected for sediment toxicity will potentially result in a higher degree of variability than toxicity tests traditionally required by NPDES permits. That higher variability could result from the requirement that testing is conducted concurrently on both the reference synthetic base fluid (C₁₆-C₁₈ Internal Olefin) and on the synthetic based drilling fluid being tested for compliance. In the sediment toxicity test, variability in the results for the reference C₁₆-C₁₈ Internal Olefin base fluid will mean variability in the limit which must be met. Normally, toxicity testing is required by NPDES permits to determine whether an effluent will cause toxic effects at a specific critical dilution. In those tests, there is essentially no variability in the limit (critical dilution) which must be achieved; however, in the sediment toxicity test the limit, as defined by the reference base fluid, will vary due to variability in the test results.

For the same reasons, a variability factor is also appropriate for the biodegradation test. Like the sediment toxicity test, the biodegradation test is a pass fail test in which the reference synthetic base fluid is tested along with the synthetic base fluid which will be used for drilling. The suggested biodegradation test protocol was also included in the final permit.

Comment Number 10:

Baroid Drilling Fluids commented that issuance of the general permit will create an inventory problem. Synthetic base fluids which will comply with the permit's limits are not currently available in sufficient quantities to replace existing stocks, and the demand for those fluids will exceed production. Also, companies will have to dispose of their current synthetic drilling fluid supplies to switch to compliant fluids. This will create a substantial expense for the suppliers and will result in barging drilling fluids to shore for disposal. Baroid requested a six month compliance period during which drilling fluid suppliers could phase in internal olefin base fluids and thus alleviate the problems of insufficient stocks and disposal of existing drilling fluid supplies.

Response:

EPA agrees that delayed implementation of the permit's limitations is appropriate. However, the limitations included in the permit modification are based on Best Available Technology Economically Achievable (BAT). The Clean Water Act requires that all NPDES permits issued after March 31, 1989 contain limitations based on BAT. Therefore, a compliance schedule cannot be included in the permit. A compliance schedule is being given in an Administrative Order.

Comment Number 11:

Baroid Drilling Fluids commented that the term “batch” needs clarification as it applies to the PAH limitations. Baroid stated that the permit language is unclear as to whether the monitoring requirements apply to the fluids delivered from the base fluid supplier or to drilling fluids supplied to operators. Permit language was suggested which Baroid believes matches the intent of the Guidelines that the PAH limit applies to the base fluid.

Response:

The language was clarified in the final permit as requested.

Comment Number 12

Baroid Drilling Fluids stated that the limit for formation oil contamination should be changed to reflect the test method which uses a standard of 1 percent.

Response:

EPA disagrees. The limit required by the Effluent Limitations Guidelines is “no discharge”.

Comment Number 13:

Baroid Drilling Fluids commented that the permit language for the formation oil limitation should not include the alternative that the permittee can provide certification, provided by the supplier, that the stock drilling fluid will meet the limits. Baroid added that the language is applicable to stock base fluids and that usage of a certified base fluid does not ensure compliance of the whole mud system.

Response:

The proposed permit specified that monitoring will be required to be performed on the stock drilling fluid. It does not refer to the stock base fluid. The Effluent Limitations Guidelines state that compliance with the formation oil limit is determined using the GC/MS test method before the drilling fluids are shipped offshore. Monitoring could be accomplished by either the supplier or the operator. That option is retained in the final permit.

Comment Number 14:

Baroid Drilling Fluids requested a change in the permit to allow averaging the different retention limits for ester base fluids and internal olefin base fluids if both are contained in a blend.

Response:

The request is denied. Sufficient data are not presently available to determine if the

environmental effects (i.e. sediment toxicity and biodegradation) vary linearly with the percentage of internal olefin or ester base fluids in a blend. In developing the Effluent Limitations Guidelines EPA saw benefits to the use of ester base fluids compared to other available synthetic base fluids and accordingly decided to allow more esters to be discharged. Esters have been found to biodegrade more quickly than other types of synthetic base fluids and to be less toxic. The higher retention limit of 9.4% is based on a different treatment technology than the 6.9% limit which applies to base fluids meeting the limits for an internal olefin. The 6.9% limit is based on horizontal and vertical centrifuge cuttings dryer technologies; whereas, the 9.4% limit can be met using a High-G linear shaker, squeeze press, or horizontal and vertical centrifuge technologies. Many existing rigs are thought to presently have the treatment technology on board which will meet the 9.4% retention limit.

Comment Number 15:

Baroid Drilling Fluids requested clarification of the permit's requirements regarding drilling fluids in existence before the effective date of the permit which contain non-compliant base fluids or base fluids which have not passed the stock limitations.

Response:

The permit prohibits the discharge of non-aqueous based drilling fluids, except those which adhere to drill cuttings, are small volume de minimis discharges, or are used in water based drilling fluids as a carrier fluid, lubricity additive or pill. Drilling fluids which adhere to drill cuttings are not authorized to be discharged unless the drilling fluid is compliant with the permit's limitations.

Comment Number 16:

Baroid Drilling Fluids commented that there will be variability in the blends of base fluids used due to either instrument/human error or availability of stock base fluids components. Baroid suggested that the permit contain language limiting the variability of individual components of the stock base fluid to 5 percent.

Response:

The request is denied. If the variability of components in stock base fluid blends were as high as 5% those fluids could easily exceed the permit's limits. Much more frequent monitoring would therefore need to be required by the permit. The need for operators to comply with limits on the discharged drilling fluids will necessitate that supplier closely control variability.

Comment Number 17:

M-I recommended use of a minimum performance standard of 2,500 mg/kg for the ten-day sediment toxicity test. M-I stated that setting such a standard would ensure that laboratories use high

quality organisms and that the test will have a high discriminatory power.

Response:

EPA believes that a performance standard may be a useful means to ensure use of high quality organisms; however, available data do not support setting a specific standard at this time. The sediment toxicity test required by the permit is a new test which has not previously been used for compliance purposes. In two years, when the permit is reissued, more data will be available and a performance standard may be proposed.

Comment Number 18:

M-I commented in favor of the decisions made by both EPA Headquarters and Region 6 in developing the Effluent Limitations Guidelines and the proposed general permit. M-I added that the test methods chosen meet the objectives for factors such as reproducibility and discriminatory power necessary for compliance monitoring.

Response:

EPA appreciates M-I's support in efforts to regulate discharges associated with synthetic based drilling fluids.

Comment Number 19:

M-I commented that the sediment toxicity tests have been developed to the point that they are usable for compliance monitoring. The industry has been conducting the tests for over three years and understands the effects of factors such as water content of the sediment, organism size, and organism health have on the reliability of test results.

Response:

EPA agrees that the tests are ready for use in compliance monitoring. Other commentors, however, have raised issues such as available laboratory capacity which may warrant additional time before the testing is required for compliance. See comment number 8 above.

Comment Number 20:

M-I commented that the monitoring frequency for the PAH stock limitation should be once per year not once per batch as proposed. In that way, the frequency would parallel the monitoring frequency for other stock base fluid limitations.

Response:

The permit language was change to be consistent with the other monitoring frequencies as requested.

Comment Number 21:

Petro Canada commented that it is unlikely that industry will be able to comply with the new limits by April, 2002 because the test protocols, in particular the four-day sediment toxicity test, are not entirely finalized. The commentor further stated that as a result of shortages of compliant drilling fluids, EPA could in effect be requiring on-shore disposal of drill cuttings.

Response:

EPA disagrees. The tests are ready for use as compliance tools (see also comment number 19, above). The tests and limitations underwent extensive public comment as part of the process to issue Effluent Limitations Guidelines. As previously stated, in this Response to Comments, the permit is required to contain the limits and monitoring requirements from the Guidelines when it is issued.

Comment Number 22:

BP Chemicals requested a change in the permit's C₁₆-C₁₈ definition from a 65:35 blend of hexadecene and octadecene to an approximate 60:35:5 blend of hexadecene, octadecene, and eicosene. BP noted that the broader description of a C₁₆-C₁₈ internal olefin type fluids incorporates all historic C₁₆-C₁₈ internal olefin type fluids used in the Gulf of Mexico for drilling. The narrow included in the proposed permit is descriptive of only one manufacturer's product.

Response:

The language in the proposed permit is reflective of the requirements of the Effluent Limitations Guidelines. The C₁₆-C₁₈ internal olefin blend is used as the standard for the sediment toxicity and biodegradation tests. Use of a different blend may result in a different effluent limitation than prescribed by the Guidelines. It is also important to have a consistent standard used throughout the industry for those tests and to be consistent with the technology based standards established by the Effluent Limitations Guidelines.